CLAIMS

1. A polypeptide, which polypeptide:

   (i) comprises the amino acid sequence as recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40 and/or SEQ ID NO:42;

   (ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

   (iii) is a functional equivalent of (i) or (ii).

2. A polypeptide according to claim 1 which:

   (i) comprises the amino acid sequence as recited in SEQ ID NO:42;

   (ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

   (iii) is a functional equivalent of (i) or (ii).

3. A polypeptide according to claim 1 or 2 which:

   (i) consists of the amino acid sequence as recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40 and/or SEQ ID NO:42;

   (ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an

antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

4. A polypeptide, which polypeptide:

(i) comprises the amino acid sequence as recited in SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98 and/or SEQ ID NO:100;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

5. A polypeptide, which polypeptide:

(i) comprises the amino acid sequence as recited in SEQ ID NO:100;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

6. A polypeptide according to claim 4 or claim 5 which:

(i) consists of the amino acid sequence as recited in SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98 and/or SEQ ID NO:100;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a Nik-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

7. A polypeptide, which polypeptide:

(i) comprises the amino acid sequence as recited in SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 and/or SEQ ID NO:158;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

8. A polypeptide, which polypeptide:

(i) comprises the amino acid sequence as recited in SEQ ID NO:158;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

9. A polypeptide according to claim 7 or claim 8 which:

(i) consists of the amino acid sequence as recited in SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID

NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 and/or SEQ ID NO:158;

(ii) is a fragment thereof which is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a Nik-like embryo specific kinase (NESK), or having an antigenic determinant in common with the polypeptide of (i); or

(iii) is a functional equivalent of (i) or (ii).

10. A polypeptide which is a functional equivalent according to part (iii) of any of the above claims, characterised in that it is homologous to the amino acid sequence as recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98, SEQ ID NO:100, SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 or SEQ ID NO:158 and is a member of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably a NIK-like kinase and more preferably a NIK-like embryo specific kinase (NESK).

11. A polypeptide which is a fragment or a functional equivalent as recited in any one of claims 1 to 10, which has greater than 80% sequence identity with the amino acid sequence recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98, SEQ ID NO:100, SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 or SEQ ID NO:158 or with an active fragment thereof, preferably greater than 85%, 90%, 95%, 98% or 99% sequence identity.

12. A polypeptide which is a functional equivalent as recited in any one of claims 1 to 11, which exhibits significant structural homology with a polypeptide having the amino acid sequence recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98, SEQ ID NO:100, SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108,

SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 or SEQ ID NO:158.

13. A polypeptide which is a fragment as recited in claims 1-9 and claim 11 having an antigenic determinant in common with the polypeptide of part (i) of any one of claim 1 to claim 9 which consists of 7 or more amino acid residues from the amino acid sequence recited in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:38, SEQ ID NO:40, SEQ ID NO:42, SEQ ID NO:44, SEQ ID NO:46, SEQ ID NO:48, SEQ ID NO:50, SEQ ID NO:52, SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:58, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:64, SEQ ID NO:66, SEQ ID NO:68, SEQ ID NO:70, SEQ ID NO:72, SEQ ID NO:74, SEQ ID NO:76, SEQ ID NO:78, SEQ ID NO:80, SEQ ID NO:82, SEQ ID NO:84, SEQ ID NO:86, SEQ ID NO:88, SEQ ID NO:90, SEQ ID NO:92, SEQ ID NO:94, SEQ ID NO:96, SEQ ID NO:98, SEQ ID NO:100, SEQ ID NO:102, SEQ ID NO:104, SEQ ID NO:106, SEQ ID NO:108, SEQ ID NO:110, SEQ ID NO:112, SEQ ID NO:114, SEQ ID NO:116, SEQ ID NO:118, SEQ ID NO:120, SEQ ID NO:122, SEQ ID NO:124, SEQ ID NO:126, SEQ ID NO:128, SEQ ID NO:130, SEQ ID NO:132, SEQ ID NO:134, SEQ ID NO:136, SEQ ID NO:138, SEQ ID NO:140, SEQ ID NO:142, SEQ ID NO:144, SEQ ID NO:146, SEQ ID NO:148, SEQ ID NO:150, SEQ ID NO:152, SEQ ID NO:154, SEQ ID NO:156 or SEQ ID NO:158.

14. A purified nucleic acid molecule which encodes a polypeptide according to any one of the preceding claims.

15. A purified nucleic acid molecule according to claim 14, which comprises the nucleic acid sequence as recited in SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:35, SEQ ID NO:37, SEQ ID

NO:39, SEQ ID NO:41, SEQ ID NO:43, SEQ ID NO:45, SEQ ID NO:47 SEQ ID NO:49, SEQ ID NO:51, SEQ ID NO:53, SEQ ID NO:55, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:61, SEQ ID NO:63, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:69, SEQ ID NO:71, SEQ ID NO:73, SEQ ID NO:75, SEQ ID NO:77, SEQ ID NO:79, SEQ ID NO:81, SEQ ID NO:83, SEQ ID NO:85, SEQ ID NO:87, SEQ ID NO:89, SEQ ID NO:91, SEQ ID NO:93, SEQ ID NO:95, SEQ ID NO:97, SEQ ID NO:99, SEQ ID NO:101, SEQ ID NO:103, SEQ ID NO:105, SEQ ID NO:107, SEQ ID NO:109, SEQ ID NO:111, SEQ ID NO:113, SEQ ID NO:115, SEQ ID NO:117, SEQ ID NO:119, SEQ ID NO:121, SEQ ID NO:123, SEQ ID NO:125, SEQ ID NO:127, SEQ ID NO:129, SEQ ID NO:131, SEQ ID NO:133, SEQ ID NO:135, SEQ ID NO:137, SEQ ID NO:139, SEQ ID NO:141, SEQ ID NO:143, SEQ ID NO:145, SEQ ID NO:147, SEQ ID NO:149, SEQ ID NO:151, SEQ ID NO:153, SEQ ID NO:155 and/or SEQ ID NO:157, or is a redundant equivalent or fragment thereof.

16. A purified nucleic acid molecule according to claim 14 which consists of the nucleic acid sequence as recited in SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31, SEQ ID NO:33, SEQ ID NO:35, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:41, SEQ ID NO:43, SEQ ID NO:45, SEQ ID NO:47 SEQ ID NO:49, SEQ ID NO:51, SEQ ID NO:53, SEQ ID NO:55, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:61, SEQ ID NO:63, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:69, SEQ ID NO:71, SEQ ID NO:73, SEQ ID NO:75, SEQ ID NO:77, SEQ ID NO:79, SEQ ID NO:81, SEQ ID NO:83, SEQ ID NO:85, SEQ ID NO:87, SEQ ID NO:89, SEQ ID NO:91, SEQ ID NO:93, SEQ ID NO:95, SEQ ID NO:97, SEQ ID NO:99, SEQ ID NO:101, SEQ ID NO:103, SEQ ID NO:105, SEQ ID NO:107, SEQ ID NO:109, SEQ ID NO:111, SEQ ID NO:113, SEQ ID NO:115, SEQ ID NO:117, SEQ ID NO:119, SEQ ID NO:121, SEQ ID NO:123, SEQ ID NO:125, SEQ ID NO:127, SEQ ID NO:129, SEQ ID NO:131, SEQ ID NO:133, SEQ ID NO:135, SEQ ID NO:137, SEQ ID NO:139, SEQ ID NO:141, SEQ ID NO:143, SEQ ID NO:145, SEQ ID NO:147, SEQ ID NO:149, SEQ ID NO:151, SEQ ID NO:153, SEQ ID NO:155 and/or SEQ ID NO:157 or is a redundant equivalent or fragment thereof.

17. A purified nucleic acid molecule which hybridizes under high stringency conditions with a nucleic acid molecule according to any one of claims 14 to 16.

18. A vector comprising a nucleic acid molecule as recited in any one of claims 14 to 17.

19. A host cell transformed with a vector according to claim 18.

20. A ligand which binds specifically to the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably to a NIK-like kinase and more preferably to a NIK-like embryo specific kinase (NESK) polypeptide according to any one of claims 1 to 13.

21. A ligand according to claim 20, which is an antibody.

22. A compound that either increases or decreases the level of expression or activity of a polypeptide according to any one of claims 1 to 13.

23. A compound according to claim 22 that binds to a polypeptide according to any one of claims 1 to 13 without inducing any of the biological effects of the polypeptide.

24. A compound according to claim 23, which is a natural or modified substrate, ligand, enzyme, receptor or structural or functional mimetic.

25. A polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, or a compound according to any one of claims 22 to 24, for use in therapy or diagnosis of disease.

26. A method of diagnosing a disease in a patient, comprising assessing the level of expression of a natural gene encoding a polypeptide according to any one of claims 1 to 13, or assessing the activity of a polypeptide according to any one of claims 1 to 13, in tissue from said patient and comparing said level of expression or activity to a control level, wherein a level that is different to said control level is indicative of disease.

27. A method according to claim 26 that is carried out *in vitro*.

28. A method according to claim 26 or claim 27, which comprises the steps of:

a) contacting a ligand according to claim 20 or claim 21 with a biological sample under conditions suitable for the formation of a ligand-polypeptide complex; and

b) detecting said complex.

29. A method according to claim 26 or claim 27, comprising the steps of:

a) contacting a sample of tissue from the patient with a nucleic acid probe under stringent conditions that allow the formation of a hybrid complex between a nucleic acid molecule according to any one of claims 14 to 17 and the probe;

b) contacting a control sample with said probe under the same conditions used in step a); and

c) detecting the presence of hybrid complexes in said samples; wherein detection of levels of the hybrid complex in the patient sample that differ from levels of the hybrid complex in the control sample is indicative of disease.

30. A method according to claim 26 or claim 27, comprising:

a)contacting a sample of nucleic acid from tissue of the patient with a nucleic acid primer under stringent conditions that allow the formation of a hybrid complex between a nucleic acid molecule according to any one of claims 14 to 17 and the primer;

b)contacting a control sample with said primer under the same conditions used in step a); and

c)amplifying the sampled nucleic acid; and

d)detecting the level of amplified nucleic acid from both patient and control samples; wherein detection of levels of the amplified nucleic acid in the patient sample that differ significantly from levels of the amplified nucleic acid in the control sample is indicative of disease.

31. A method according to claim 26 or claim 27 comprising:

a)obtaining a tissue sample from a patient being tested for disease;

b)isolating a nucleic acid molecule according to any one of claims 14 to 17 from said tissue sample; and

c)diagnosing the patient for disease by detecting the presence of a mutation which is associated with disease in the nucleic acid molecule as an indication of the disease.

32. The method of claim 31, further comprising amplifying the nucleic acid molecule to form an amplified product and detecting the presence or absence of a mutation in the

amplified product.

33. The method of claim 31 or claim 32, wherein the presence or absence of the mutation in the patient is detected by contacting said nucleic acid molecule with a nucleic acid probe that hybridises to said nucleic acid molecule under stringent conditions to form a hybrid double-stranded molecule, the hybrid double-stranded molecule having an unhybridised portion of the nucleic acid probe strand at any portion corresponding to a mutation associated with disease; and detecting the presence or absence of an unhybridised portion of the probe strand as an indication of the presence or absence of a disease-associated mutation.

34. A method according to any one of claims 26 to 33, wherein said disease includes, but is not limited to cell proliferative disorders, including neoplasm, melanoma, lung, colorectal, breast, pancreas, head and neck and other solid tumours; myeloproliferative disorders, such as leukemia, non-Hodgkin lymphoma, leukopenia, thrombocytopenia, angiogenesis disorder, Kaposis' sarcoma; autoimmune/inflammatory disorders, including allergy, inflammatory bowel disease, arthritis, psoriasis and respiratory tract inflammation, asthma, and organ transplant rejection; cardiovascular disorders, including hypertension, oedema, angina, atherosclerosis, thrombosis, sepsis, shock, reperfusion injury, and ischemia; neurological disorders including central nervous system disease, Alzheimer's disease, brain injury, amyotrophic lateral sclerosis, and pain; developmental disorders; metabolic disorders including diabetes mellitus, osteoporosis, and obesity, AIDS and renal disease; infections including viral infection, bacterial infection, fungal infection and parasitic infection and other pathological conditions and in particular developmental disorders of late embryogenesis and neural tube defects such as spina bifida.

35. A method according to any one of claims 26 to 33, wherein said disease is a disease in which members of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably NIK-like kinases and more preferably NIK-like embryo specific kinases (NESK) proteins are implicated.

36. Use of a polypeptide according to any one of claims 1 to 13 as a group 1 GCK kinase.

37. Use of a polypeptide according to any one of claims 1 to 13 as a NIK-like kinase.

38. Use of a polypeptide according to any one of claims 1 to 13 as a NIK-like embryo specific kinase (NESK).

39. A pharmaceutical composition comprising a polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, or a compound according to any one of claims 22 to 24.

40. A vaccine composition comprising a polypeptide according to any one of claims 1 to 13 or a nucleic acid molecule according to any one of claims 14 to 17.

41. A polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, a compound according to any one of claims 22 to 24, or a pharmaceutical composition according to claim 39, for use in the manufacture of a medicament for the treatment of cell proliferative disorders, including neoplasm, melanoma, lung, colorectal, breast, pancreas, head and neck and other solid tumours; myeloproliferative disorders, such as leukemia, non-Hodgkin lymphoma, leukopenia, thrombocytopenia, angiogenesis disorder, Kaposis' sarcoma; autoimmune/inflammatory disorders, including allergy, inflammatory bowel disease, arthritis, psoriasis and respiratory tract inflammation, asthma, and organ transplant rejection; cardiovascular disorders, including hypertension, oedema, angina, atherosclerosis, thrombosis, sepsis, shock, reperfusion injury, and ischemia; neurological disorders including central nervous system disease, Alzheimer's disease, brain injury, amyotrophic lateral sclerosis, and pain; developmental disorders; metabolic disorders including diabetes mellitus, osteoporosis, and obesity, AIDS and renal disease; infections including viral infection, bacterial infection, fungal infection and parasitic infection and other pathological conditions and in particular developmental disorders of late embryogenesis and neural tube defects such as spina bifida.

42. A polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, a compound according to any one of claims 22 to 24, or a pharmaceutical composition according to claim 39, for use in the manufacture of a medicament for the treatment of a disease in

which members of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably NIK-like kinases and more preferably NIK-like embryo specific kinases (NESK), are implicated.

43. A polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, a compound according to any one of claims 22 to 24, or a pharmaceutical composition according to claim 39, for use in the manufacture of a medicament for the treatment of a disease in which NIK-like kinases and preferably NIK-like embryo specific kinases (NESK) proteins are implicated.

44. A method of treating a disease in a patient, comprising administering to the patient a polypeptide according to any one of claims 1 to 13, a nucleic acid molecule according to any one of claims 14 to 17, a vector according to claim 18, a host cell according to claim 19, a ligand according to claim 20 or claim 21, a compound according to any one of claims 22 to 24, or a pharmaceutical composition according to claim 39.

45. A method according to claim 44, wherein, for diseases in which the expression of the natural gene or the activity of the polypeptide is lower in a diseased patient when compared to the level of expression or activity in a healthy patient, the polypeptide, nucleic acid molecule, vector, ligand, compound or composition administered to the patient is an agonist.

46. A method according to claim 44, wherein, for diseases in which the expression of the natural gene or activity of the polypeptide is higher in a diseased patient when compared to the level of expression or activity in a healthy patient, the polypeptide, nucleic acid molecule, vector, ligand, compound or composition administered to the patient is an antagonist.

47. A method of monitoring the therapeutic treatment of disease in a patient, comprising monitoring over a period of time the level of expression or activity of a polypeptide according to any one of claims 1 to 13, or the level of expression of a nucleic acid molecule according to any one of claims 14 to 17 in tissue from said patient, wherein altering said level of expression or activity over the period of time towards a control level is indicative of regression of said disease.

48. A method for the identification of a compound that is effective in the treatment and/or diagnosis of disease, comprising contacting a polypeptide according to any one of claims 1 to 13 or a nucleic acid molecule according to any one of claims 14 to 17 with one or more compounds suspected of possessing binding affinity for said polypeptide or nucleic acid molecule, and selecting a compound that binds specifically to said nucleic acid molecule or polypeptide.

49. A kit useful for diagnosing disease comprising a first container containing a nucleic acid probe that hybridises under stringent conditions with a nucleic acid molecule according to any one of claims 14 to 17; a second container containing primers useful for amplifying said nucleic acid molecule; and instructions for using the probe and primers for facilitating the diagnosis of disease.

50. The kit of claim 49, further comprising a third container holding an agent for digesting unhybridised RNA.

51. A kit comprising an array of nucleic acid molecules, at least one of which is a nucleic acid molecule according to any one of claims 14 to 17.

52. A kit comprising one or more antibodies that bind to a polypeptide as recited in any one of claims 1 to 13; and a reagent useful for the detection of a binding reaction between said antibody and said polypeptide.

53. A transgenic or knockout non-human animal that has been transformed to express higher, lower or absent levels of a polypeptide according to any one of claims 1 to 13.

54. A method for screening for a compound effective to treat disease, by contacting a non-human transgenic animal according to claim 53 with a candidate compound and determining the effect of the compound on the disease of the animal.